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CLAIMS

1. A method for reducing emission of pollutants from an internal combustion engine including at least one combustion chamber, comprising:  
5 injecting a fuel emulsion into the at least one combustion chamber;  
igniting the fuel emulsion in the at least one combustion chamber in the presence of air;  
10 operating the internal combustion engine so as to reduce peak combustion temperature in the at least one combustion chamber;  
wherein the fuel emulsion comprises a liquid hydrocarbon fuel, water, at least one emulsifier and  
15 at least one oxygen-containing water soluble organic compound.

2. The method of claim 1, wherein operating the internal combustion engine so as to reduce peak combustion temperature in the at least one combustion  
20 chamber comprises recirculating a portion of exhaust gases produced during ignition into the at least one combustion chamber.

3. The method of claim 1, wherein operating the internal combustion engine so as to reduce peak  
25 combustion temperature in the at least one combustion chamber comprises controlling injection timing of the fuel emulsion in the combustion chamber.

4. The method of claim 1, wherein operating the internal combustion engine so as to reduce peak  
30 combustion temperature in the at least one combustion chamber comprises compressing and cooling intake air before entering the combustion chamber.

5. The method according to anyone of the previous claims, wherein the water is present in an  
35 amount not greater than 15% by weight.

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6. The method according to claim 5, wherein the water is present in an amount of from 2 to 12% by weight.

7. The method according to claim 6, wherein  
5 the water is present in an amount of from 2.5 to 10% by weight.

8. The method according to claim 7, wherein the water is present in an amount of from 3 to 8% by weight.

10 9. The method according to anyone of the previous claims, wherein the oxygen-containing water soluble organic compound is present in a predetermined amount so as to obtain an amount of water soluble organic oxygen of from 0.1 to 5% by weight.

15 10. The method according to claim 9, wherein the oxygen-containing water soluble organic compound is present in a predetermined amount so as to obtain an amount of water soluble organic oxygen of from 0.3 to 4% by weight.

20 11. The method according to claim 10, wherein the oxygen-containing water soluble organic compound is present in a predetermined amount so as to obtain an amount of water soluble organic oxygen of from 0.5 to 2.5% by weight.

25 12. The method according to claim 11, wherein the oxygen-containing water soluble organic compound is present in a predetermined amount so as to obtain an amount of water soluble organic oxygen of from 0.8 to 2% by weight.

30 13. The method according to anyone of the previous claims, wherein the oxygen-containing water soluble organic compound is a non-ionic organic compound having at least one oxygen-containing group selected from: hydroxyl group, ether group, ester  
35 group, ketone group, peroxy group, and combinations thereof.

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14. The method according to anyone of the previous claims, wherein the oxygen-containing water soluble organic compound has a solubility in water at 20°C of at least 5% by weight.

5        15. The method according to claim 14, wherein the oxygen-containing water soluble organic compound has a solubility in water at 20°C of at least 8% by weight.

10       16. The method according to anyone of the previous claims, wherein the oxygen-containing water soluble organic compound is selected from alcohols, glycols, polyols, ethers, ketones, and mixtures thereof.

15       17. The method according to anyone of the previous claims, wherein the emulsifier has a hydrophilic-lipophilic balance (HLB) of from 2 to 10.

18. The method according to claim 17, wherein the the emulsifier has a hydrophilic-lipophilic balance (HLB) of from 3 to 8.

20       19. The method according to anyone of the previous claims, wherein the emulsifier is present in an amount of from 0.1 to 10% by weight.

25       20. The method according to claim 19, wherein the emulsifier is present in an amount of from 0.5 to 5% by weight.

30       21. A fuel emulsion comprising a liquid hydrocarbon fuel, water, at least one emulsifier and at least one oxygen-containing water soluble organic compound as additive for reducing emission of pollutants, wherein water is present in an amount not greater than 15% by weight and the oxygen-containing water soluble organic compound is present in a predetermined amount so as to obtain an amount of water soluble organic oxygen of from 0.1 to 5% by  
35       weight.

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22. The fuel emulsion according to claim 21, wherein the water is present in an amount of from 2 to 12% by weight.

23. The fuel emulsion according to claim 22,  
5 wherein the water is present in an amount of from 2.5 to 10% by weight.

24. The fuel emulsion according to claim 23, wherein the water is present in an amount of from 3 to 8% by weight.

10 25. The fuel emulsion according to anyone of claims from 21 to 24, wherein the oxygen-containing water soluble organic compound is present in a predetermined amount so as to obtain an amount of water soluble organic oxygen of from 0.3 to 4% by  
15 weight.

26. The fuel emulsion according to claim 25, wherein the oxygen-containing water soluble organic compound is present in a predetermined amount so as to obtain an amount of water soluble organic oxygen of  
20 from 0.5 to 2.5% by weight.

27. The fuel emulsion according to claim 26, wherein the oxygen-containing water soluble organic compound is present in a predetermined amount so as to obtain an amount of water soluble organic oxygen of  
25 from 0.8 to 2% by weight.

28. The fuel emulsion according to anyone of claims from 21 to 27, wherein the oxygen-containing water soluble organic compound is a non-ionic organic compound having at least one oxygen-containing group  
30 selected from: hydroxyl group, ether group, ester group, ketone group, peroxy group, and combinations thereof.

29. The fuel emulsion according to anyone of claims from 21 to 28, wherein the oxygen-containing  
35 water soluble organic compound has a solubility in water at 20°C of at least 5% by weight.

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30. The fuel emulsion according to claim 29, wherein the oxygen-containing water soluble organic compound has a solubility in water at 20°C of at least 8% by weight.

5           31. The fuel emulsion according to anyone of claims from 21 to 30, wherein the oxygen-containing water soluble organic compound is selected from alcohols, glycols, polyols, ethers, ketones, and mixtures thereof.

10           32. The fuel emulsion according to anyone of claims from 21 to 31, wherein the emulsifier has a hydrophilic-lipophilic balance (HLB) of from 2 to 10.

15           33. The fuel emulsion according to claim 32, wherein the the emulsifier has a hydrophilic-lipophilic balance (HLB) of from 3 to 8.

34. The fuel emulsion according to anyone of claims from 21 to 33, wherein the emulsifier is present in an amount of from 0.1 to 10% by weight.

20           35. The fuel emulsion according to claim 34, wherein the emulsifier is present in an amount of from 0.5 to 5% by weight.

25           36. A method for reducing emission of pollutants from an internal combustion engine fuelled by a fuel emulsion comprising a hydrocarbon phase and an aqueous phase dispersed in the hydrocarbon phase, the method comprising adding to the fuel emulsion at least one oxygen-containing water soluble organic compound so as to obtain a predetermined amount of water soluble organic oxygen in the aqueous phase.

30           37. Use of an oxygen-containing water soluble organic compound as additive for reducing emission of pollutants from an internal combustion engine fuelled by a fuel emulsion.

35           38. Use a fuel emulsion comprising a liquid hydrocarbon fuel, water, at least one emulsifier and at least one oxygen-containing water soluble organic

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compound as fuel in a distribution network for fuelling heavy load trucks and/or passenger cars.